What is claimed is:

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1	1.	A method comprising
2	identi	fying at least one carrier of a plurality of carriers is in a non-data bearing
3	state; and	λ
4	modu	lating the at least one non-data bearing carrier with random data.
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1	2.	The method of claim 1, wherein the at least one non-data bearing carrier
2	is a pilot tone	e. \
1	3.	The method of claim 1, wherein the identifying of the at least one carrier
2	is in the non-	data beaking state further includes
3	receiving information as to which carriers of the plurality of carriers are to be in	
4	a non-data be	earing state; and
5	select	ting the at least one non-data bearing carrier based on the information.
1	4.	The method of claim 3, wherein the at least one non-data bearing carrier
2	is used for a	function besides data transmission including channel characterization.
1	5.	The method of claim 4, wherein the at least one non-data bearing carrier
2	is used for or	ne of synchronization, carrier recovery and timing recovery.
1	6.	The method of claim 1, wherein prior to modulating the at least one non-
2	data bearing	carrier, the method further comprises producing the random data as a
3	pseudo-rando	om bit stream.
1	7.	The method of claim 1, wherein the modulating of the at least one non-
2	data bearing	carrier is performed in accordance with Orthogonal Frequency Division
3	Multiplexing	s (OFDM).
1	8.	The method of claim 1, wherein the identifying of the at least one carrier
2	in the non-da	ata bearing state comprises:

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3	receiving a carrier map from a remotely located system, the carrier map is	
1	produced at the system in response to conducting channel estimation analysis on the	
5	plurality of carriers to indicate which carriers are unreliable.	
l	9. The method of claim 8, wherein the carrier map indicates which of the	
2	plurality of carriers is deemed to be in an unreliable state.	
l	10. A multi-carrier modulation system comprising:	
2	a feedback link;	
3	a multiplexer unit coupled to the feedback link, the multiplexing unit, including	
1	input ports and output ports, to receive as input a transmission data and a random data	
5	and, for each output port, to transmit one of the transmission data and the random data	
5	based on information transmitted over the feedback link; and	
7	a modulator to modulate a non-data bearing carrier with the random data.	
l	11. The multi-carrier modulation system of claim 10, wherein the modulator	
2	further outputs a multi-carrier modulated signal inclusive of the modulated, non-data	
3	bearing carrier.	
l	12. The multi-carrier modulation system of claim 10, wherein the modulator	
2	to modulate a plurality of carriers that correspond in number to a number of output	
3	ports.	
l	13. The multi-carrier modulation system of claim 11, wherein the modulator	
2	modulates the non-data bearing carrier with the random data when the information	
3	indicates that the non-data bearing carrier is unreliable.	
l	14. The multi-carrier modulation system of claim 13, wherein non-data	
2	bearing carrier is determined to be unreliable through prior analysis of the carrier at a	
3	receiver using channel estimation.	

2 random bit generator coupled to a first input port of the input ports.

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The multi-carrier modulation system of claim, 10 further comprising a

1	16. The multi-carrier modulation system of claim 10 further comprising	a
2	pseudo-random bit generator coupled to a first input port of the input ports.	
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1	17. The multi-carrier modulation system of claim 10, wherein the modulation system is a significant system.	atoi
2	performs modulation in accordance with an Orthogonal Frequency Division	
3	Multiplexing (OFDM) modulation scheme.	
1	18. The multi-carrier modulation system of claim 11, wherein the feedba	CK
2	link enables receipt of the information from a remotely located receiver system	
3	receiving the multi-carrier modulated signal.	
1	19. A network comprising:	
2	a system coupled to a first link; and	
3	a first multi-carrier modulation (MCM) system in communication with the	
4	network transceiver over a second link, the first MCM system to identify at least one	
5	carrier of a plurality of carriers is in a non-data bearing state based on feedback	
6	information provided by the system and to modulate the at least one non-data bearing	ıg
7	carrier with random data.	
1	20. The network of claim 19, wherein the first link is an Alternating Curr	rent
2	(AC) power line.	
1	21. The network of claim 20, wherein the system is a network transceive	r
2	for routing data over the AC power line.	
1	22. The network of claim 19, wherein the system is a second multi-carrie	r
2	modulation (MCM) system.	
1	23. The network of claim 19, wherein the first MCM system comprises:	
2	a multiplexer unit in communication with the system, the multiplexing unit,	
3	including input ports and output ports, to receive as input a transmission data and a	
4	random data and, for each output port, to transmit one of the transmission data and the	
5	random data based on the feedback information provided by the system; and	

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6	a modulator to modulate the at least one non-data bearing carrier with the		
7	random data		
1	24. The network of claim 19, wherein the first MCM system is a modem.		
1	25. The network of claim 19, wherein the first MCM system is a computer		
2	with wireless connectivity.		
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1	26. A computer program embodied in internal memory and executable by		
2	processing unit, comprising:		
3	a first software module to identify at least one carrier of a plurality of carriers		
4	associated with a transmit signal is in a non-data bearing state; and		
5	a second module to modulate the at least one non-data bearing carrier with		
6	random data.		
1	27. The computer program of claim 26, wherein the at least one non-data		
2	bearing carrier is a pilot tone.		